Notebook, N-03-06-26

This notebook contains dated entries from June, September, and November 1903. Included are notes and drawings by Edison regarding storage batteries, phonograph recording and reproduction apparatus, and etheric force experiments. Some of the entries pertain to the use of storage batteries in automobiles. There is also a list of fifteen "probable causes" for loss of capacity in the Edison battery. At the beginning of the book is a 15-page list of chemical compounds compiled by an unidentified experimenter. The pages are unnumbered, and several pages have been removed from the book. Approximately 90 pages have been used.

1333

15
2000
4 | 30000
75000 watts

1333

2000-

Vol. 1 Amorphous

Page

Aconitate of Silver
Aerolime Ammonia
Chloride of Calcium
Allantoin boiled with
Mercurious oxide
148 Aloeretic Acid

162 Ultramarine

200 Amorphous
Galolinite
Citrous Arsenious

209 Aviacardic Acid

233 Anchoate of Ammonium

240 Anchusin

241 Animonic Acid

416 Asclepias Syriaca

430 Antimonium heated with
Caustic Potash.

478 Oxybenzoide
527 Bark of the Birch
546 Benzilum
560 Nitro Benzoyl - Benzoin
576 Benzoylmid
580 Benzolite
613 Borates of Lead
672 Bromate of Silver
685 Bryonin
718 Potassium Salt
732 Camphoramide. (gummy).
836 Chlorinated derivatives of Croton (Gummy)
848 Chelidonates of Calcium
858 Acetate of Chelidonine (gummy)

amorphous gummy & yellow
867 Chenocholic Acid
925 Cholesterin
928 Cholophaein
" Cholochloïn
" Chlorochromic acid
929 Choloïdic Acid
936 Chrysanimates
949 Cinchona - red
981 Cinnamein
Nitro-mitacinnamum
997 Monobasytic citrate
997 Citrate of Aluminum
998 Citrate of Lithium
" Citrate of Magnesium
Dipotassic Citrate

1054 Cocalannic Acid
Coca - ingr.

1063 Bromin

1067 Tribromocodeine

" Chlorocodeine

1106 Ammonium - Salt

"

Page Vol III

1 Haematoxylin

5 Chlorium

18 Dichlorhamin

139 Bromhydrin

151 Heracleic Acid

167 Sulphohydrunic Acid

172 Argyrescin

175 Hirmopic Acid

177 Cupric Salt

190 Hydrocarstin
Hydrocumarinide

214 Trin hydrone oin

Ammonin

Aqueous Solution added
neutral acetate of lead

239 Gallate of Silver

274 Dracaprin

276 Nitro-Anosit

314 Spermacetic Acid

321 Silver-Salt

415 Copper-Salt

Page 433 Leofrine

437 Lithantic salt

460 Acetolactate of Iron

Actolactate of Copper

" of Zinc

461 Dibutyl sulphurous acid

462 Sulpholactate of Lead

464 Lactates of Methyl

475 Lead salt

788 Isomalic

791 Malates of Ammonium

793 Malates of Copper

Malate of Iron

Malate of Lead

800 Mandelic Acid

816 Sulphide of Manganese

821 Mangostin

825 Manitic acid

Manitates of Copper salts.

852 Margarites

Barium salt.

854 Marmodin

912 Amorphous Mucic Sulphide

984 Mutulmic acid

993 Zodide

1004 Calcium salt

1008 Dicyanmethylene

1014 Cerous sulphomolybdate

1054 Cyanurate of Morphine

" Hyppurate

1055 Militate
1056 Lodomorphine
Hydriodate
1072 Hydriodate of Lead
1075 Lot Nitric acid

Page 4 Vol. II
Alcoholic tincture iodine mixt. Conine
Conine exposed to vapour of bromine
" 5 Acetate of conine
" 14 Convolvulic acid boiled excess of Baryta-water
" 14 Calcium-Salt boiled mixt. milk of lime
" 18 Copaiba-resins
" 18 Glycopaivic Acid
" 19 Copal

Page 70 cupric oxide in ammonia
" 102 Creatine & Creatinine by action of Nitric Acid

Page 108 - Barium - Salt & Lead Salt
" 109 - Crocetin
" 111 - Crocopanthin
" 114 - Crystallisation - Plastic sulphur, nitrous arsenious acid & Barley sugar.
" 177 - Cinco - sulphophenamide
" 183 - Cummylide of potassium
" 185 - Cubcarine
" 200 - Ammonia Cobalticyanide of Nickel
" 208 - ~~Cupro-cyanide of copper~~ cupric salt & cyanide of potassium
" 209 - Cyanide of Ammonium + cupric salt
" 228 - Ferric ferrocyanide
" 247 - Pulverised crystals heated mixt strong sulphuric acid.

Page 274 - Cyanin

" 294 - Cyclamin

" 322 - Diffluan

" 330 - Digitassolin

" 336 - Digonyl

345 - Dragon's Blood

351 - Bamin-salt

360 - Dysbysin

483 - Alcoholic solution of Eburnicasin

502 - Eythrasin

533 - Hydride of Ethyl

543 - Silicohydrate of Ethyl in contact salicylic acid

548 - Sulphi ethylate of Copper
Sulphiethylate of gold

557 - Chlorhydrate or Hydrochlorate of Ethylamine

570 - Bromethylene or Bromide of Ethyl

581 - Ethylene, oxysulphydrate of

602 - Euchlorate of Silver

604 - Eugenates

609 - Eupanitate of Silver

610 - Salts of bromeupanitic
Chloreupanitic acid
Nitroeupanitic acid

646 - Ficus sylvatica

646 - Felicic acid
Sodium salts
Chlorofilicic

646 - Filimulin - sulphuric acid

646 Filipicic acid
646 chlorofilipicic acid.

Page 693 - Aromatics of Tin
Stannous formate.

693 - Stannic formate

739 - Scopin

746 - Sulfanilamide

749 - Phosphates of Sanguinine

763 - Gallotannic acid

766 - Bromine on gallotannate of Bismuth

766 - Aqueous gallotannic acid with aqueous acetic -

767 - Tannate of Antimony

768 - Tannate of Iron

771 - Garcinia Mangostana

824 - Cumulin of gaseous chlorine passed through gelatin -

830 - Glycuronic acid

831 - Lignite fuel from gentisic acid

848 - Phoglucic acid -

870 - Quinovin - sugar

874 - Gluten in hydrated state

876 - Glycuric anhydride (?)

898 - Epichlorhydrin
Cyanuric ammonia

901 - Silver - Salt. Nitrate of Silver to Alkaline ~~Sodium Salt~~ glycocholate -

Glycocholate of sodium

904 - Nitrosaccharates

919 - Glycyretin

920 - Glycyrhizin

921 - Glyapal

930. Penta-chloride of phosphorous.

931. Lucanine

932. Oxyguanine

Fol V.

Page 2 Quercitamide

" 4 Ferric Chloride - Quercitin.

" 6 Nitroquercite

" 7 Hydrated Quercitin

" 12 Quinotes

" " Quinate yttrium - salt

" " of Copper - ferric salt.

Page 17 - Quinine - Trichlorate

- 19 - Quinine salts - Borate + Chlorate

" " Croconate + Rhodizonate of Quinine

" " Hydriodate of Quinine

" 20. Cyanoplatinotes

" 21 Nitrate

" 22 Sulphate of Quinine

Page 24 - Quinotannic acid (Tannate)

" " Palerate of Quinine

" " Liquid Quinine

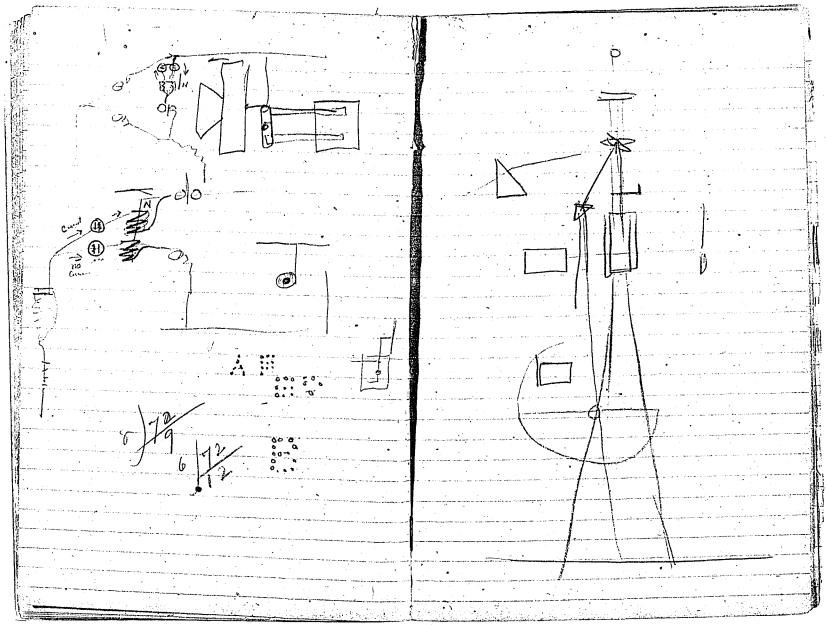
" 25 Ethylquinine

" 26 Quinine - Sulphuric acid -

" 27 Quinone - aqueous solution

" 30 Quinonic acid - aqueous solution

" 32

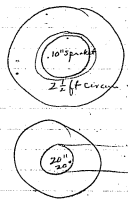


151 Rev

28" wheel 20" driven 1½ driven

Motor 2000 Rev on 151 Rev axle

12 mile hour -



12" pitch pinion

1000 ft uniform vel pinion

375
750 -

Motor ~~20~~ ~~1500~~
2000 -

0 1½ -

3
151
3
453 -

151
25
755
300
3755

1500 . 12 - 6 1000

151
25
755
300
3775

18
3
54 -
375

19

151
25
755
300
3775
3
3.72
2000
750
1500
750
0

151

150
2
75 -

625 -

12) 7.50 (625
72
30
24
60

Acetate Cadmium Gel

750
353
397 -

400.

5280
12
105 60
528 0
60) 6336 (1056
60
336
300
360
360

7 ft
28" wheel
12 mile hour
151 Revolution.

7) 1056
151

28
3
84 -) 1056 (12
84
216
168
48

1.5 ton miles per cell

1070 - 62 miles -
1070 62

1 ton 60 mile

358
2
706 - 21 - 40 cells
10

40) 60 (1.5 -
40
20

$1\frac{1}{2}$ ton miles per cell,

3 miles 2
6 4
12 8
24 16
48 32
96 — 64 cells
102 — 68 cells —

11 ft

3.6) 144 (40
144

Battery 4.28

1.5

3.6) 276 (66
66 lbs

36) 4.00 (120

400 — Carriage
353 Battery
320 — men
1073 — Total,
706 — Motor battery
800 " Carriage
60 " Motor
2639

2639 —
5473

2639
5278

2631
5262

Axles, 2X2 10 ft 120 lbs
Springs 16 ft, average 40
2 Carriage tubes 2" 1/4 thick
20 ft 120
Wood sides ... 90
bottom 120
Wheels, 166
gear wheel etc — 20
Brake 15
Seat 40
Levers 20
Chains 8
Steps etc 10
769

775 Carriage
150 Motor
700
350 1 ton
1975
353
2328 — 62 Miles —

15

85 / 175 (2.058
170
500
425
750

2.058
98
16464
165222
201081

24

216 - camp

72
21
7
144 / 24
9
216
950
1080
1944
20520

1 / 12000
133 24 7 4

249.48
24.94
224.54

185
16

19
216
36
36
2268

216
105
1080
216
2268

12000
120
1080
3

2.058
105
10290
2.058
21609

133
15
665
133
2394

18 / 124 (1
18

18 / 129 (6.6
108
18

150 -
110
210
360 170

2. 48% -
97 miles

105

/25 -

7 9-

68
28
2 / 96
48

170
68
120
9
136
0
680
5081

450
18 / 8100

24
18
192
24
432

9½ =

18 / 170 (9.4
162
80
72

432
3
296
21
124
2592
2721
4

18
108
18
36
468

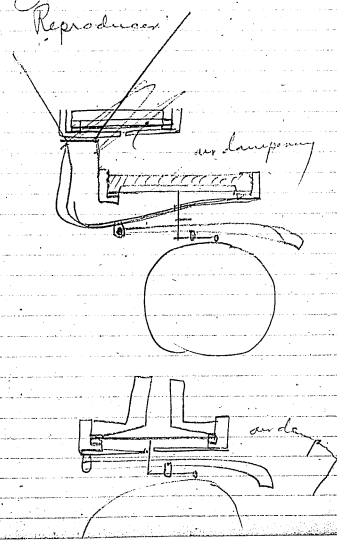
24 / 66 (2.7
48
18

36
13
108
108
36
468

3c pocket,

June 26 1903

Reproducer



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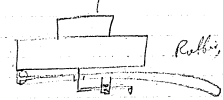

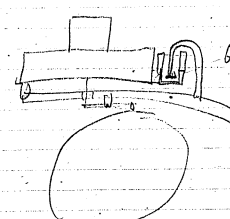

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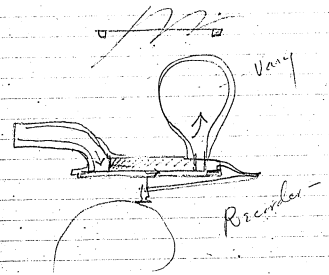
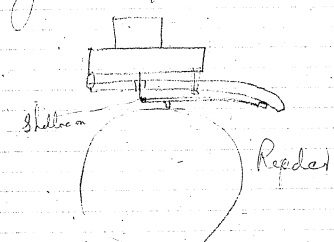
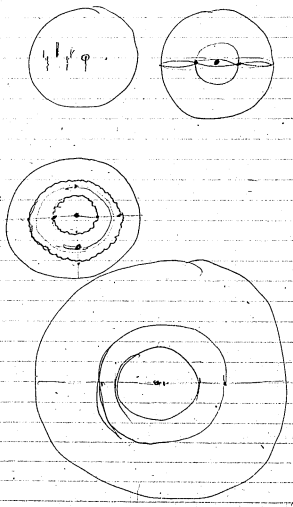
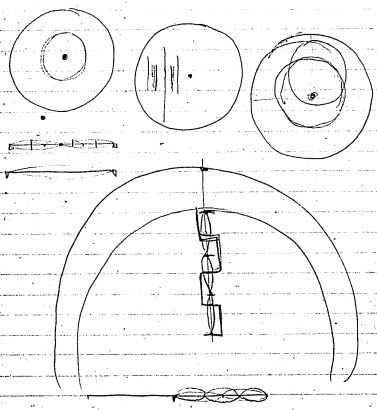


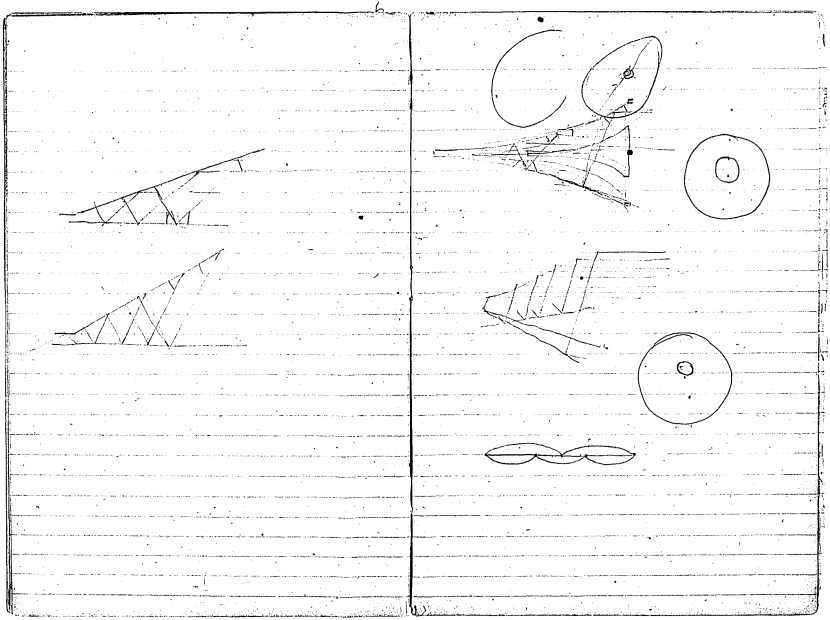
June 26 1903



Sept 12 1903

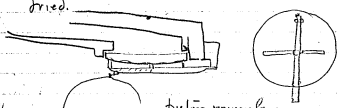






Nov 7 1903

Tried.

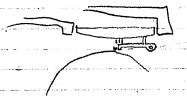


pistols principle

not fine tuned at Edges, 003 spaces

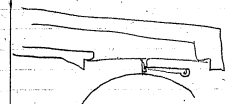
works fairly well, low notes strong high notes

moderate, Quality best

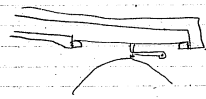


Tomorrow. Then in good shape

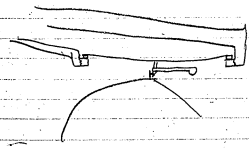
Nov 7 1903.



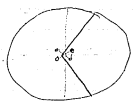
Glass disk loose at edges, edges have easier dip on dia ~~stamp~~ strained by torsion lever.



loose plate strained outward by torsion lever ordeal.

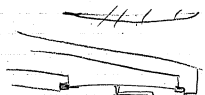


loose but rubber cemented to edges

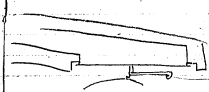


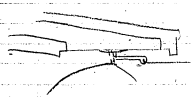
1250
1250
6250
625
3125
1250
2500
1250
2500
3750
1250
3906.25
1562.5

Nov 7 1903



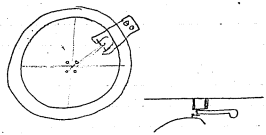
Rubber on both sides of edges - forced in acceptable
so as to put skin under tension.





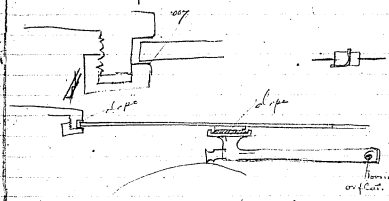
powerful tension

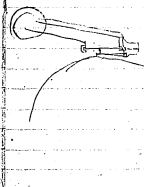
Nov 7 1903



Diaphragm, in four sections ø 0.0005 apart possibly 8 sections better. There would be only one fundamental and no overtones by [redacted] placing of pins coincident. Recorder latest could break this up from a fundamental to overtones of lower compatibility.

Nov 20 1903

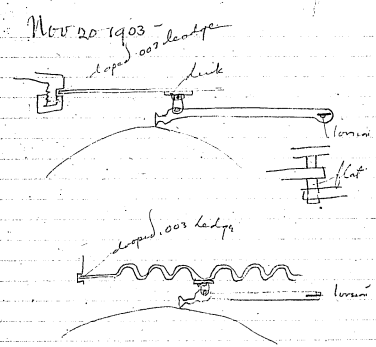




5/8 dia Mica .0015 to .002
Tonnin levers. also dropped wed.
Try shellacked tissue paper dia —
edge on 003 bridge dopped heavy
dope.

Try 1/16 felt dia - doped small bridge —
Tonnin ~~dia~~ lever

Nov 20 1903 –



Try putting X Ray & Radium fluorescers under pressure gradually moving between thick glass plates,

Try Radium on Chalk telephone when working acc of charges Capillarity or rotation,

Nov 20 1903

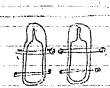
Size of Radium changes hysteresis in Metal rod –

See if rod gives off a ray at the moment when it Cools down from high heat & gives that jerk – also try it in Coil & try Current heating wire as source & detect by fluorescent sulphide & try Oxides – These should be a powerful change also try wire with X Y Z receivers –

Make a slide with all the Metals & Metal Oxides &c

ditto with all the Oxides
" " Hydroxides

Make a slide with 50 vials for liquids in lime glass



Nov 20 1903.

Some of probable causes of Nickel Electrode in SB. losing its capacity for full discharge by several hundred reversals -

1st Sulphur forming Sulfide or blinding grid
2nd Gelatinous Silica
3 " " Aluminum -
4 Iron deposited inside and acts as reducing agent, Calyhzer,
5 Mercury depositing inside -
6 Tin depositing inside,
7 Impurities in Iron depositing inside -
8 Nickel reduced to metal Hydride
9 " " to an oxide dehydrated
10 " " to Metal
11 Hydrogen passing down pores of graphite getting nickel hydrox out contact
12 Iron or impurities depositing on grid or graphite then oxidizing get Ni OH out contact
13 Highly conc KOH forced in a heat burns Ni OH to white insol Ni OH, same as when its heated in KOH,
14 Hg gets in and forms Na Amalg & reduces Ni OH to Metal gritty,

15
16 Hydrogen giving swells grid too much

"

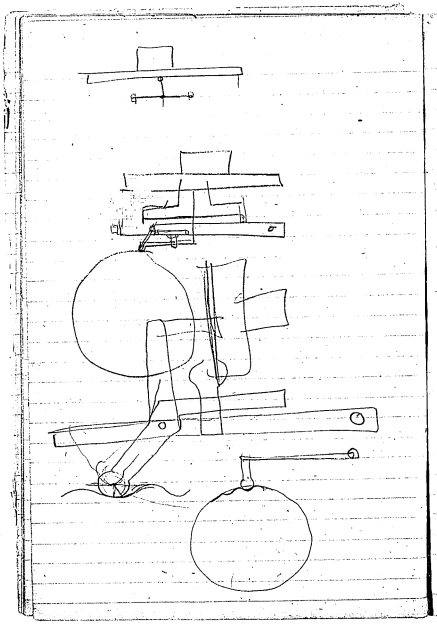
Nov 20 1903

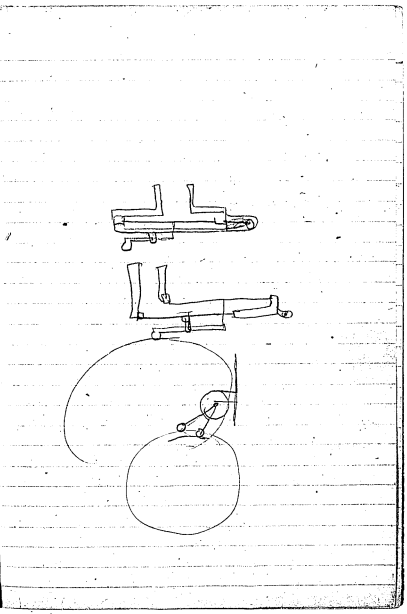
Try Radium on a small cell see how it effects. Em T -

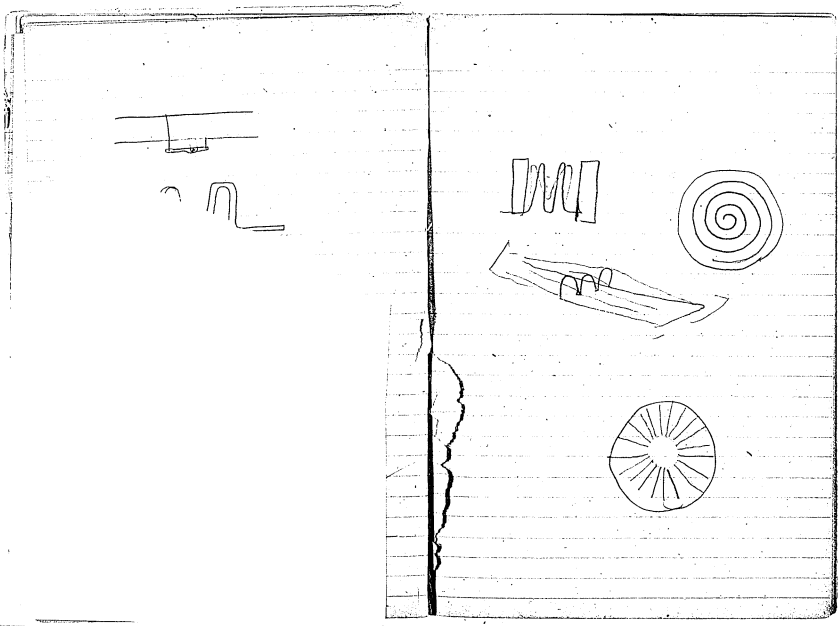
Dissolve all varities of asphaltic in Carbon Disulphide with various proportions of Sulphur that Evaporate CS_2 & Vulcanize to obtain a substance hard hard rubber suitable for operations on S Battery

Possibly some of above will melt & act as hardeners for phono Records

In place of Carnauba Shunk Shellac & some of the metal will do to harden made by fusion process fm Acetate, for Records Etc.





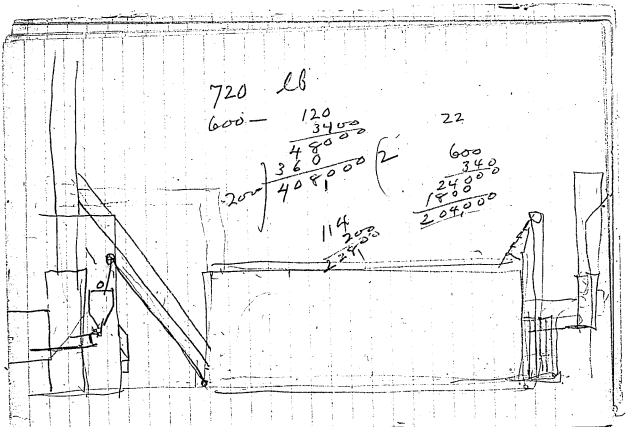


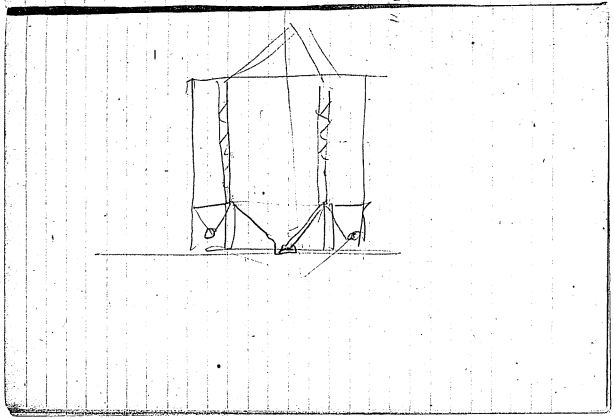
720 lb

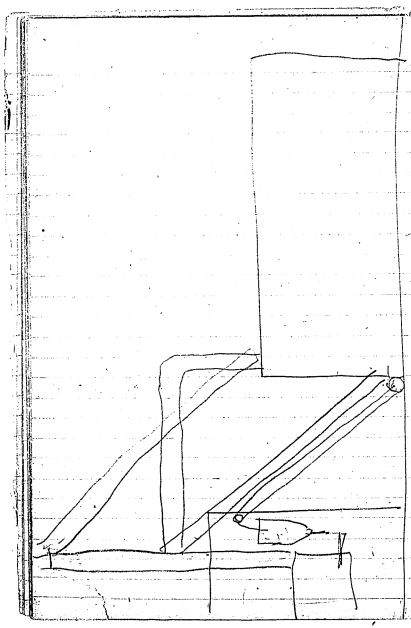
600 — 120
3400
480000
360
408000
200

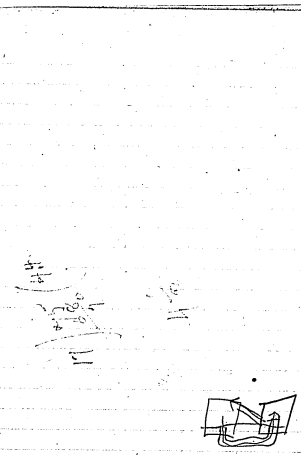
22
600
340
240000
180000
204000

114
2400
2400









600 — 86

300

5 — 16

161

24

225

600

3500

4 | 300

25

60

161

180

125

700

600

300

2500

15

30

28

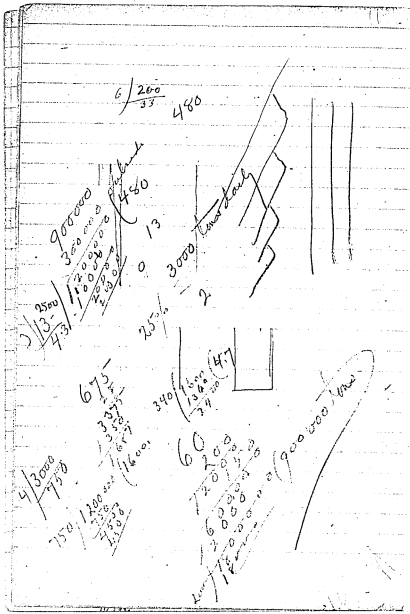
60

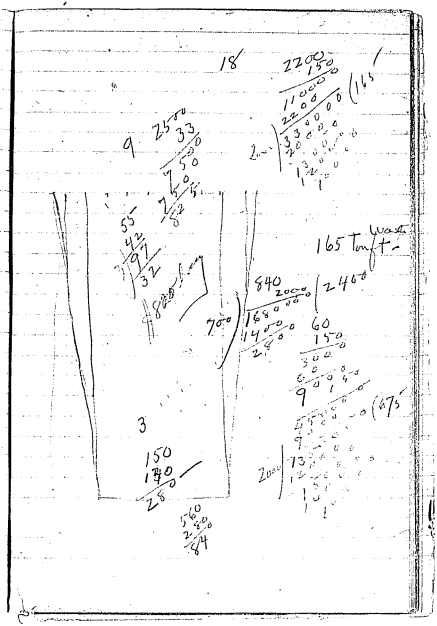
720

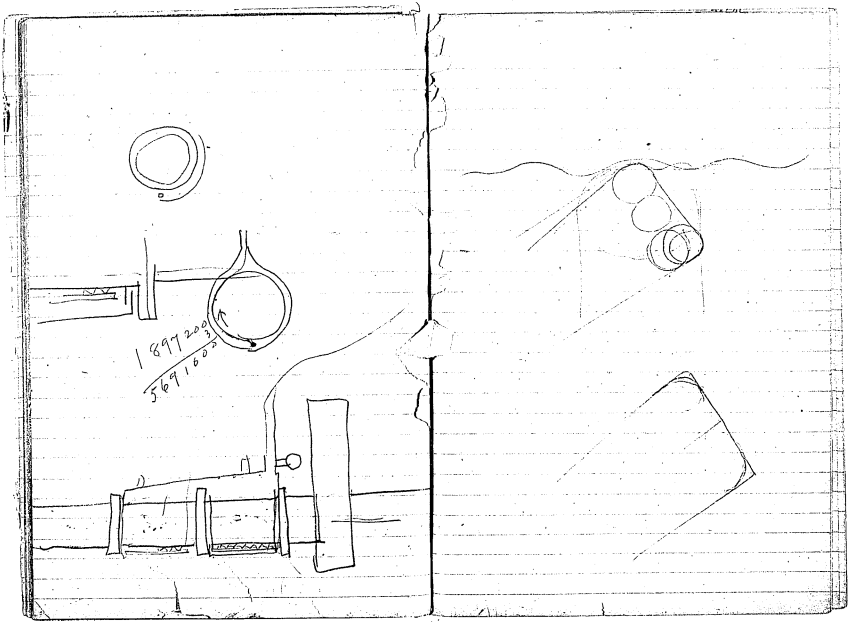
17

17

28




165 Tons


1897200
5691002

124410

150

148 70

2400000

12441

27

54

216

108

1296

12410

3.5

1800000

124 410

90 514

2 147 624

1074 628

429 884 100

90 514

5373 1

27

54

108

54

648

1296

28

1800

5373

1725

316800

17224

13824

1800

27

54

55

2000

90,514

35

20

1296

12

2592

1296

1800

1725

3110400

1728

1

2 to 1.

2 tons Cement 21 c 42
1 ton Lime 120 — 120 / 42 / 33 / 78 / 33 / 45 / 33 / 12 (3.3 — 16

16 C 68P-

18

3 Cent 21 63
1 Lime 120 — 120 / 63 / 4 / 57 / 33 / 60 / 33 / 27 (1.4

14 C

4C

3 Cement — 42 c
1 Lime — 1 Ram 42 / 31 / 33 / 73 / 33 / 40 / 33 / 7 (7.4

7.4

1.4

3 Cent. Cent 63
Rambrani — 31 / 4 / 27 / 33 / 90 / 33 / 57 (7.3

7.3

1.3

3 Cement 63
1 Ramb — 50
4 / 13 / 33 / 26 / 7 (8.5

8.5

2.5

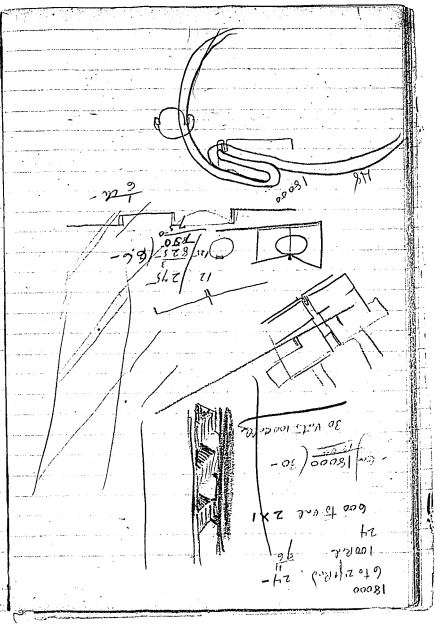
2 Cement # 42
1 Ram — 50 / 3 / 9 / 33 / 310 / 297 / 13 (9.4

9.4

3.4 all rams

2 Cement # 42
1 Lime 33 / 33 / 9

6 C



3000
85000
6000
28
28
2000
71
85000
84
6
6
2000
.333
4800
776
2000
35000
84992

12 Hills 250 ft high 4.44 HP gravity

20220 watt hours

60 watts per 1000 lb mile —
3600 lb — 210 watt hour per car
gravity 3410 watt hours —
level 16810 watt hours
or 80 miles without change
Sand roads 50 miles 50 miles —
or long hg 110 + 80 miles —

180
125
700
360
180
2250
112
354

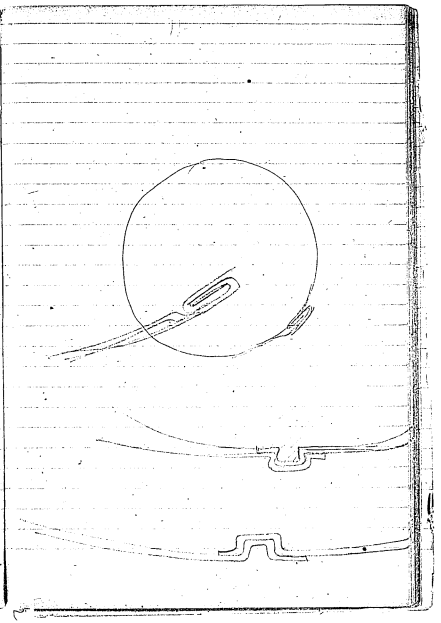
54
27
81
324
108
324

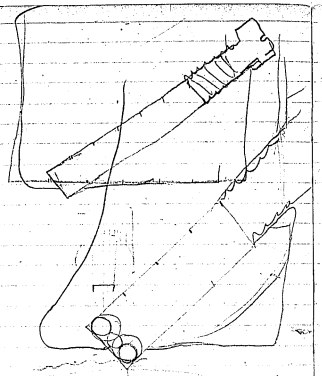
4410
4444
3069
3069
3069
3069
3401

20220 | 210 | 16810 - 180
3410 | | 1680
16810 | | 10

Saratoga, Schenectady
Utica Richfield Springs
Scranton, —— Delwater gap
Easton, Washington,
Hackettown, Morristown
Orange, Newark N.J.

N.Y. Jefferson, Poughkeepsie
Albany, Pittsfield, Hartford
Worcester Boston, Concord
Utica, —— Hartford
~~Bom~~ —— N.York





116
29
145

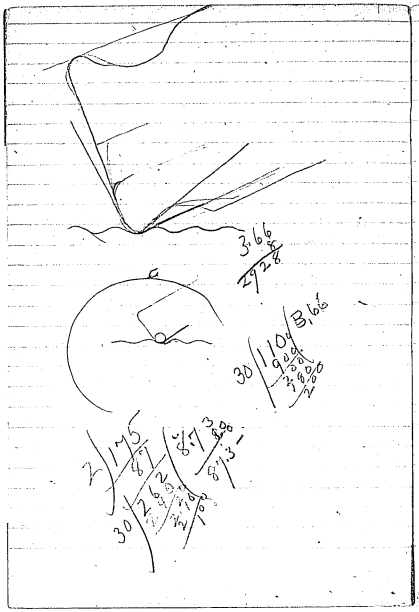
NY Newark-Elizabeth, Rahway
New Brunswick — Lakewood

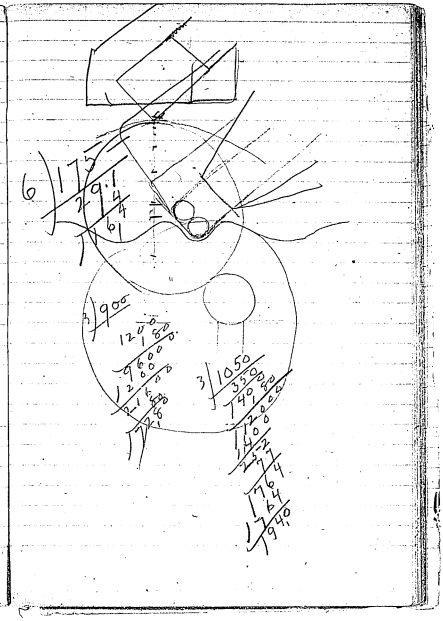
NY newark Montclair, Suffern
Port Jervis, Del water gap
Manuchunk Washington
Hackettstown Morristown,
Orange NY York —

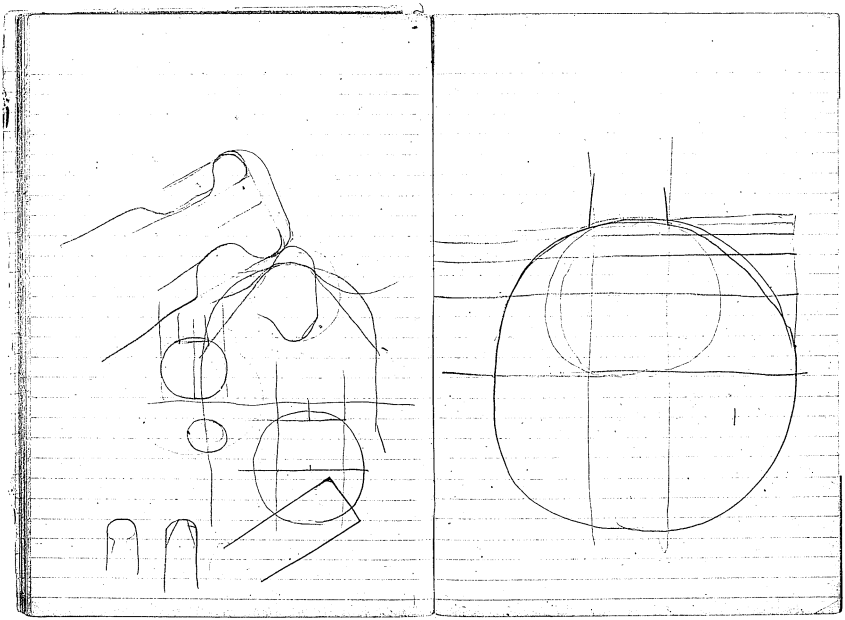
NY, Newark New Brunswick
Long Branch Asbury park
Point Pleasant, Lakewood, Moorestown
Phila

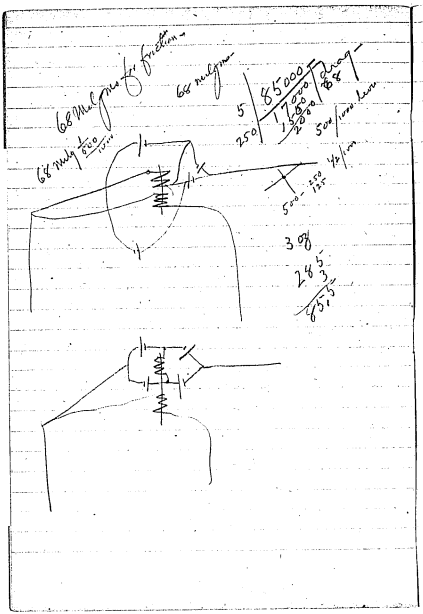
Phila Atlantic City
Lakewood Moorestown
New Brunswick NY

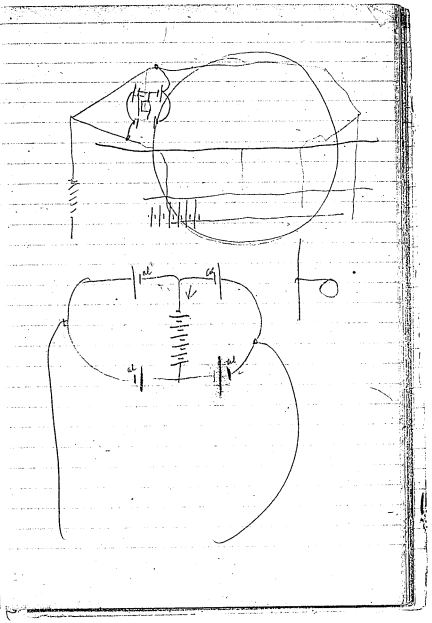
NY York. Suffern Newburgh
Poughkeepsie — Albany
Albany - Saratoga
Sar

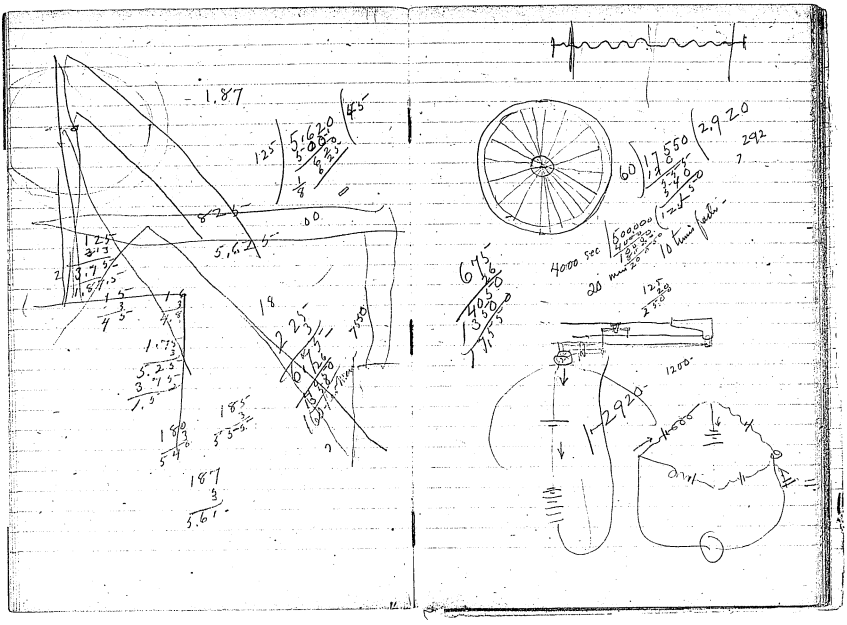


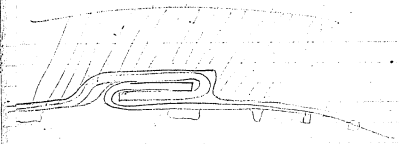





68 mulgrew
68 mulgrew
68 mulgrew
5 | 85000
250
500 - 250 = 250
500 - 250 = 250
38
285
651




1.87
4000 sec
20 min
10 hours
1200



147 | 68250 | 464

249

170000
136000

334250
273000
67250

65250 | 464

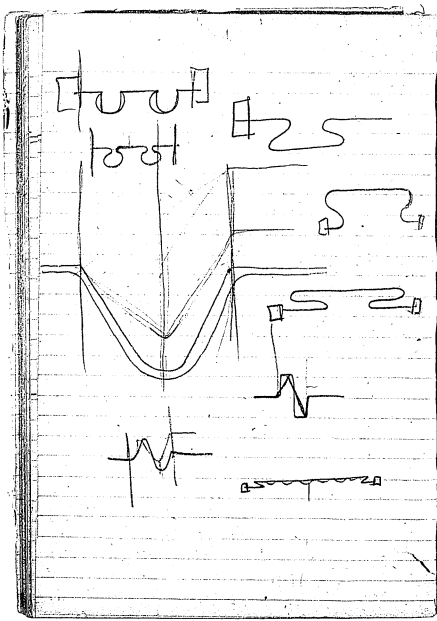
56000
56000
5000
5000

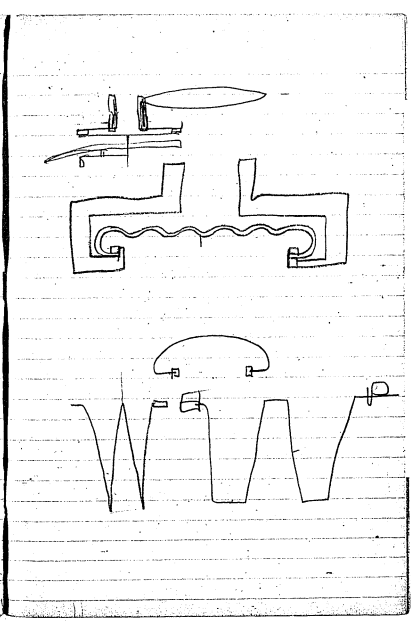
826550
249
744120
20

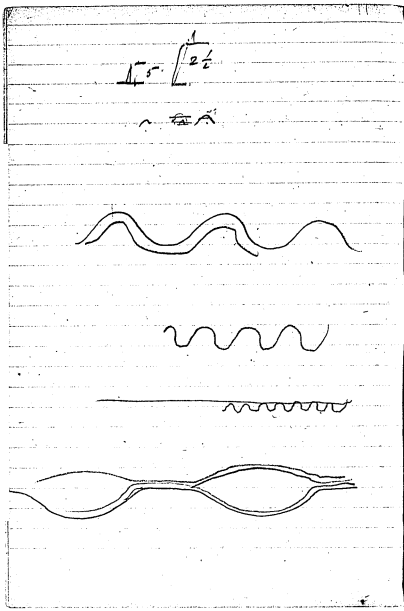
175 | 82550 | 472

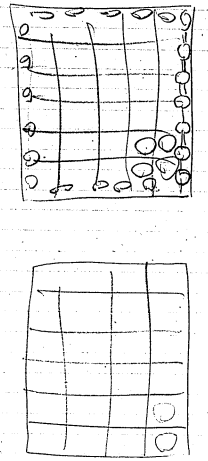
135 | 63000

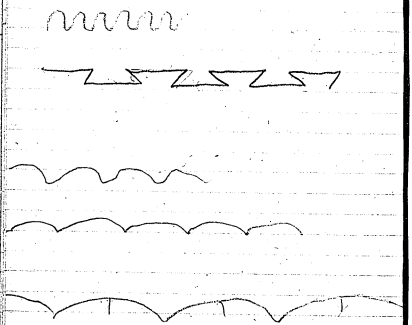
1320 | 408











250
250
250 0
00
625 00
6200 1
499

249
249
2241
996
498
6200 1

500

62500 | 500 0000 | 8
37500

62500 | 500 000 | .71
437500
625000

8 hour chg 8 hour dischg

290 — .0055 3½ lb-cell

9 cells Cold run grams coefficient — Cut out pap. Plus 20 —

3 " No work air dried

3 " " Dried low heat.

9 cells Cut Kg Irons

9 " " Restored one week

del Reform - N_2OH_2 - made chg wamp

Dif wamp loading

5 Rings - spaced right -

Thro 20 30 40 50 - from — -

Mix Ni Co of Cake by action

8 Co 1 Ni

7 Co 2 " 3 liters Sol —

6 Co 3 "

5 Co 4 " use ½ thick Ni of pocket,

4 Co 5 " Just use reg thick Ni -

Punched perfo. group -

Nickel plated tubes from .005 of mm to .006 or ½ mm Ni —

Warm twisted one turn (tubes) pump —

group - 15% KOH 6% K_2CO_3

12 " 9% "

10 " 11% "

Just strength punched + burn stock

log. ifl 5 grams per cell

Thin walled low pressure Opening —

Also 4 Tubes with Reg Reg Cut Reg wam

with 5 6 6.5 7 7.5 grams per pocket.

dutch 80 to 20 Bi no-Kg - 6.5 - 7 grams

435) 7460 (17.1
435
3115
3045
65

3) 1100 (366
1866
1755
1100
1098
2
1099
1098
1
8996
1099
1991
1991

246) 746 (3
738
8

17) 145 (8.5
136
9

197
125
785
394
197
246) 25

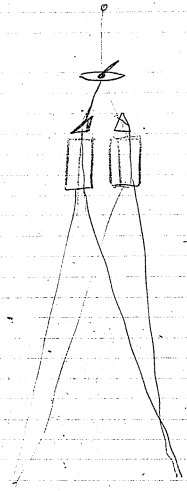
328) 746 (2.27
656
9.56
6.56
2.44

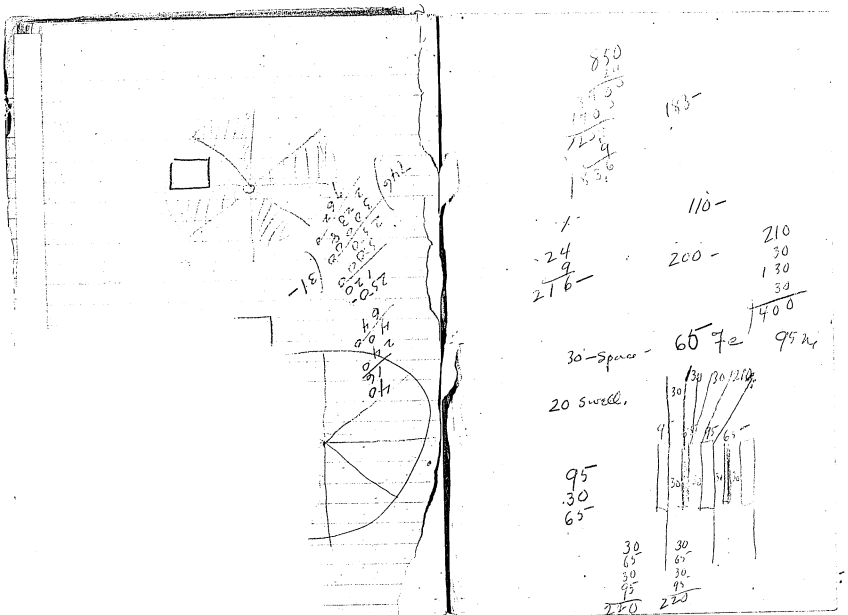
33) 746 (22.6
66
80
66
20

22.6

227
145
135
908
227
3.2915
3966
180
25

1176
1466
3.88
263
125
131
126
38
2.86
3.257




850
183
110
24
9
216
200
210
30
130
30
400
30-Space
65 7e
95 4
20 Swell.
95
30
65
30
65
30
95
220
30
65
30
95
220